

7. Which liquid boiled first (i.e. had the lowest boiling point):

- The non-polar liquid boiled first.

8. Explain how intermolecular attractions affect the boiling point of a substance.

Due to the non-polar molecules having a stronger attraction, their boiling point is much higher than that of the polar molecules.

9. Explain why polar and non-polar substances won't stay mixed with each other.

Due to the oil being a polar substance it does not completely mix with the water, which is a non-polar substance. The oil has the ability to separate from itself and form weak bonds with the outer atoms of the water however it will not mix and the bonds will easily break.

10. Which molecule had the strongest attraction:

- the most polar molecule

11. Explain why polarity has an effect on the strength of attraction between molecules.

If a substance is non-polar it has a weaker attraction because the atoms are already evenly shared. When molecules are more polar they have a stronger attraction because the atoms are unevenly shared until another polar molecule bonds with it and even each other out.

12. Which substance will have the highest boiling point:

- 1,4,7-heptanetriol

13. Explain your choice for highest boiling point:

Due to the substance having a bigger charge (in this case positive) it has stronger attractions between atoms therefore it will take more heat to separate the substance.

14. Which molecule pairs had the strongest attraction (check all that apply):

- the large straight and circular molecules

15. Propane boils at -42°C, butane at 0°C, and pentane at 36°C. They are all straight molecules. Which one is the biggest?

- pentane

16. Small molecules did not attract well. However, only some of the large ones had a strong attraction. Describe how both size and shape play a role in the strength of the London Dispersion attraction.

The shape of the molecule determines the polarity of the molecule and also determines the strength of the bond. Size plays a role because the bond will be stronger with help from a larger surface area.

17. Snapshot with annotations indicating hydrogen bonds:

No Answer